

PROCEEDINGS
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PLATYSQUILLA HOROLOGII (STOMATOPODA,
LYSIOSQUILLIDAE), A NEW SPECIES FROM THE
GULF OF MEXICO, WITH AN EMENDATION
OF THE GENERIC DEFINITION

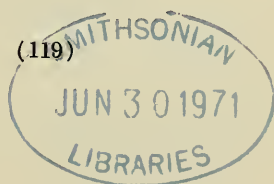
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The stomatopod genus *Platysquilla* Manning, 1967, now contains two species, *P. eusebia* (Risso, 1816) and *P. enodis* (Manning, 1962). The new species described herein was discovered while examining stomatopod crustaceans from Project Hourglass, a 28-month biological sampling program conducted on the west Florida shelf by the Marine Research Laboratory of the Florida Department of Natural Resources (Joyce and Williams, 1969). This new species does not agree in all respects with Manning's (1968) diagnosis and later (Manning, 1969) definition of *Platysquilla*. I have examined representatives of *P. eusebia* and *P. enodis*, and have found that none of the *P. eusebia* examined agree fully with the generic definition. An emendation of the generic definition of *Platysquilla* and the description of the new species is presented here.

Total length was measured with vernier calipers along the dorsal midline from the anterior margin of the rostral plate to the posterior margin of the dorsal projection of the telson. This measurement is cited for each specimen under Material. All other measurements were made with an ocular micrometer. Telson length was measured along the dorsal midline from the anterior margin to the posterior margin of the dorsal projection. Other measurements and terminology generally follow Man-

¹ Contribution No. 166.



ning (1969). The generic definition presented herein is after Manning (1969, p. 90), with the addition of necessary alterations.

I would like to express my gratitude to Dr. Raymond B. Manning, Chairman, Department of Invertebrate Zoology, Smithsonian Institution, (USNM), for confirming this new species, for loaning specimens of *P. eusebia* and *P. enodis* for comparative purposes, for offering technical advice, and for critically reviewing the manuscript. My appreciation goes to Dr. L. B. Holthuis, Rijksmuseum van Natuurlijke Historie (RMNH), Leiden, The Netherlands, who loaned specimens of *P. eusebia* and examined other specimens at my request. I thank my colleagues at the Marine Research Laboratory (FSBC I), Mr. Robert W. Topp and Mr. Stephen P. Cobb, for advice and comments on the manuscript, and especially Mr. William G. Lyons whose advice and critical reading of the manuscript is heartily appreciated.

Platysquilla Manning, 1967

Platysquilla Manning, 1967, p. 238.—Holthuis, 1967, p. 26 [references].
—Manning, 1968, p. 111 [key and text].—Manning, 1969, p. 90.

Material: *Platysquilla eusebia* (Risso, 1816): 1 ♀, 45.6 mm; Naples, Italy, Zoological Station; no other data; USNM 23207. 1 ♀, 53.9 mm, 1 ♂, 57.3 mm; Gulf of Naples, Italy; May, 1924; G. Stiasny; RMNH 73.

Platysquilla enodis (Manning, 1962): 1 ♀, 57.5 mm; off Vineyard Sound, 31–49 m, U.S. Fish Commission Stations 1247–1251; from the stomach of a flounder; S. I. Smith; 1887; holotype, USNM 12787. One broken ♀; off North Carolina, 35°35'20"N, 74°58'45"W, 49 m, Albatross Station 2296; paratype, USNM 8816.

Platysquilla new species: material listed under species description.

Definition: Size moderate to small, total length 75 mm or less. Body smooth, depressed, loosely articulated. Eyes of moderate size, cornea faintly bilobed, set obliquely on stalk. Rostral plate subquadrate or cordiform, with or without apical spine. Antennal protopods with ventral papillae, with or without mesial papillae. Carapace narrowing anteriorly, without carinae or spines; cervical groove indicated on lateral plates only. Thoracic somites without dorsal carinae, lateral margins truncate; eighth thoracic somite with low, inconspicuous tubercle on ventral midline. Epipods three to five. Mandibular palp absent. Raptorial claw slender; dactylus armed with nine or more teeth, inferior margin notched basally; propodus fully pectinate, with four movable spines at base, first longest, second shortest; carpus with distal, dorsal spine; ischiomerall articulation terminal; merus slender, elongate, longer than ischium. Endopods of

walking legs two-segmented, distal segment of first two endopods ovate, that of third more slender. Abdomen depressed, loosely articulated; anterolateral plates with complete suture. Sixth abdominal somite with or without posterolateral spines, with curved, ventrally directed process on each side anterior to articulation of uropods; ventral surface with or without paired, submedian, posteriorly directed spines. Telson broad, with obtuse, triangular, median posterior projection; marginal armature on each side of midline a row of slender, submedian denticles, one movable tooth, and four fixed lateral teeth, with or without a denticle between each fixed tooth. Basal segment of uropod with two dorsal carinae, medial terminating in slender spine; proximal segment of exopod with short dorsal carina, lateral margin of exopod with slender, movable spines; endopod triangular, proximal portion of lateral edge folded over; spines of basal prolongation triangular in cross-section, mesial spine longer.

Type-species: Squilla eusebia Risso, 1816, by original designation.

Remarks: Manning (1963), in erecting the genus *Heterosquilla*, noted that two species, *Squilla eusebia* Risso, 1816, and *Lysiosquilla enodis* Manning, 1962, differed sufficiently from their congeners to warrant being placed in a separate genus. In a preliminary account (Manning, 1967), they were removed from *Heterosquilla* and placed in a new genus, *Platysquilla*. Manning (1968) presented a diagnosis of the new genus, and later (Manning, 1969) presented the generic definition.

The new species described herein differs from *P. eusebia* and *P. enodis* by lacking the mesial papillae on the antennal protopods and the apical spine on the rostral plate, by having a cordiform rather than subquadrate rostral plate, and by possessing only three epipods.

Manning (1969, pp. 11–12, 19) discussed the importance of the antennal papillae and epipods in recognizing genera and species within the Lysiosquillidae. These features are generally constant among congeners of western Atlantic lysiosquillids. Members of *Platysquilla* depart from this constancy, however, in that numbers of epipods and antennal papillae vary significantly. The eastern Atlantic *P. eusebia* has five epipods, *P. enodis* has four, and the new species has three. *Platysquilla eusebia* has two mesial and two ventral papillae, *P. enodis* has one mesial and two ventral papillae, and the new species has no mesial and two ventral papillae.

None of the specimens of *P. eusebia* examined had denticles between all lateral fixed teeth of the telson. One male, total length 57.3 mm (RMNH 73), had inconspicuous tubercles between each fixed tooth. One female, total length 46.5 mm (USNM 23207), had a denticle between only the first and second fixed teeth. Another female, total length 53.9 mm (RMNH 73), had only one minute tubercle between the first and second fixed teeth.

At my request, Dr. L. B. Holthuis has kindly examined other specimens of *P. eusebia* from the Gulf of Naples and has informed me that the denticles between the four fixed teeth of the telson are variable. They

are either entirely absent, or are small between the first and second teeth, very small between the second and third, and visible only as a minute tubercle between the third and fourth teeth.

***Platysquilla horologii* new species**

(Figure 1)

Lysiosquilla excavatrix: Lunz, 1935, p. 153 [part].—Chace, 1954, p. 449 [part, listed] [not *Lysiosquilla excavatrix* Brooks, 1886, p. 48].

Platysquilla undescribed species: Manning, 1969, p. 93.

Holotype: 1 ♀, 16.2 mm; about 65 miles west of Egmont Key, Pinellas County, Florida, 27°37'N, 83°58'W, 55 m; trawl, Robert F. Presley on R/V *Hernan Cortez*; 9 September 1966; USNM 128831.

Paratypes: 1 broken ♀, about 15.6 mm; about 85 miles west of Egmont Key, Pinellas County, Florida, 27°37'N, 84°13'W, 73 m; scrape dredge, R. F. Presley on R/V *Hernan Cortez*; 2 August 1966; USNM 128832. One ♂, 13.1 mm; same locality; 3 March 1967; FSBCI 7268. One broken ♀, about 14 mm; off Charlotte Harbor, Charlotte County, Florida, 26°47'30"N, 83°25'15"W, 51.2 m; *Albatross* Station 2410; USNM 9825.

Diagnosis: Antennular peduncle without mesial papillae, with two ventral papillae; three epipods present; rostral plate cordiform, without apical spine; dactylus of raptorial claw with eleven teeth; telson with four pairs of fixed marginal teeth, mesial two pairs sharp.

Description: Eyes of moderate size, cornea faintly bilobed, set obliquely on stalk; lateral margin of stalk without obtuse projection. Ocular scales with bases fused, apices appressed. Eyes exceeding first segment of antennular peduncle.

Antennular peduncle short, slightly longer than one-half carapace length. Antennular processes produced into slender, curved, anteriorly-directed spines.

Antennal scale short, less than one-half carapace length. Antennal peduncle with no mesial and two ventral papillae.

Rostral plate broader than long, lateral margins evenly convex, anterolateral angles broadly rounded, anterior margins sloping to an obtuse apex. Plate covering base of eyestalks, not extending to cornea.

Dactylus of raptorial claw slender; superior margin with eleven teeth; inferior margin evenly convex, with strong basal notch. Propodus of claw stout, fully pectinate, with four movable spines at base, first longest, second shortest. Dorsal ridge of carpus terminating in a slender spine. Ischiomerar articulation terminal; merus longer than ischium, grooved inferiorly throughout its length for reception of propodus.

Mandibular palp absent, three epipods present.

Fifth thoracic somite without apparent lateral or ventral projections. Sixth thoracic somite with lateral processes truncate, anterolateral angles more rounded than posterolateral angles. Seventh thoracic somite broader, lateral margins more rounded than sixth. Eighth thoracic somite with inconspicuous median ventral tubercle. Lateral spine at base of walking

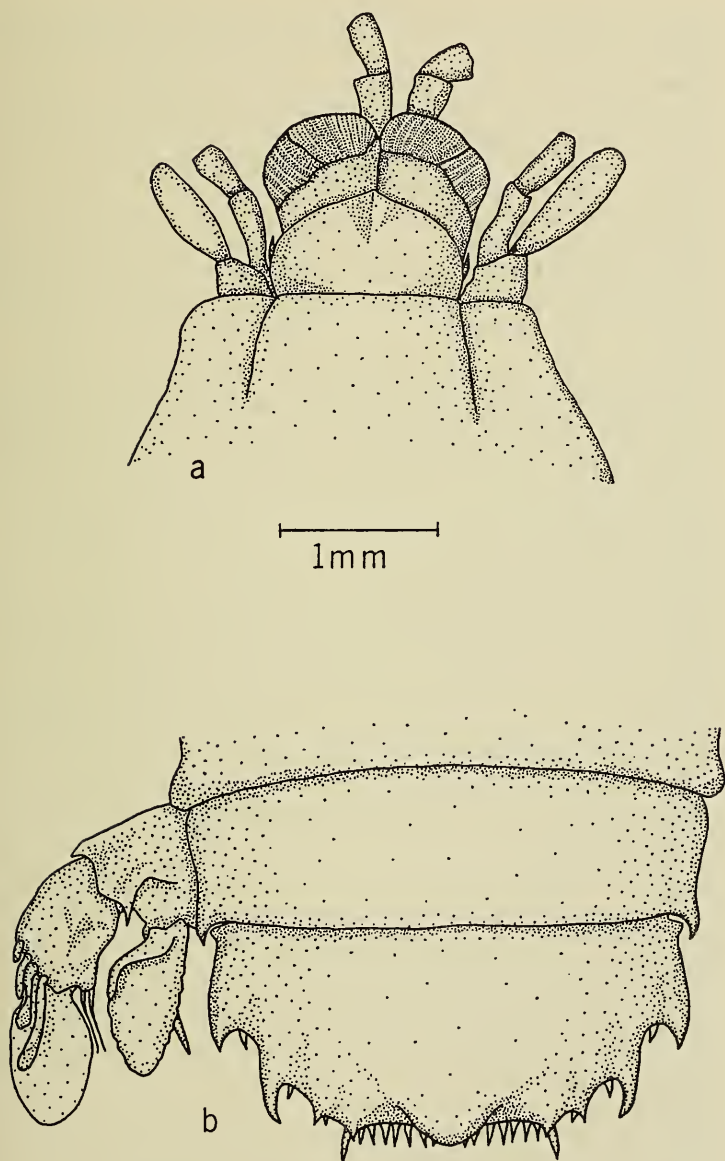


FIG. 1. *Platysquilla horologii* n. sp., female paratype (USNM 128832), total length about 15.6 mm, off Egmont Key, Florida. a, anterior portion of body; b, sixth abdominal somite, telson, and uropod (setae omitted).

legs more slender than mesial spine; endopods of walking legs ovate, third most slender. Length of walking legs unequal, first shortest, last longest.

Abdomen smooth, depressed, loosely articulated. Anterolateral plates with complete suture. Sixth abdominal somite with single spines at posterolateral angles; spine at underside of anterolateral angles immediately anterior to articulation with uropods ventrally-directed, short; ventral surface otherwise unarmed.

Telson broader than long; dorsal surface with broad, triangular median marginal projection, otherwise smooth. Marginal armature on each side of midline a transverse row of seven or eight slender, movable denticles, one movable submedian tooth, and four sharp, fixed teeth, with one slender denticle between each; first fixed tooth above movable submedian tooth.

Basal segment of uropod with mesial and lateral carinae, mesial carina incomplete proximally, terminating distally in sharp spine. Proximal segment of uropodal exopod with short dorsal carina; lateral margin with four or five spatulate spines, last two recurved; mesial margin with distal, rounded lobe bearing two or three stiff setae. Distal segment of uropodal exopod subequal to proximal, ovate, more setose on lateral margin. Uropodal endopod triangular, proximal portion of lateral margin folded over. Spines of basal prolongation of uropod triangular in cross-section; mesial spine about ten times longer than lateral spine.

Color: Unknown in life, mostly faded in preservative. Dark patch on dorsum of antennal peduncle and adjacent margin of carapace. Scattered spots on dorsum of carapace and anterior abdominal somites.

Measurements: Female holotype, total length, 16.2 mm; carapace length, 2.8 mm; cornea width, 0.7 mm; rostral plate length, 0.7 mm, width, 1.1 mm; fifth abdominal somite width, 2.9 mm; telson length, 1.4 mm, width 2.4 mm. Male paratype, total length, 13.1 mm; carapace length, 2.6 mm; cornea width, 0.7 mm; rostral plate length, 0.8 mm, width, 1.1 mm; fifth abdominal somite width, 2.7 mm; telson length, 1.4 mm, width, 2.0 mm.

Discussion: *Platysquilla horologii*, new species, most closely resembles *P. enodis*, differing from the latter as follows: 1) there are eleven teeth on the dactylus of the raptorial claw rather than nine; 2) there is no obtuse projection on the lateral margin of the eyestalk; 3) the inner two pairs of fixed teeth on the telson are sharp rather than spatulate; 4) the process on the sixth abdominal somite anterior to the articulation of the uropod is short and almost inconspicuous rather than prominent; 5) the rostral plate, antennal papillae, and epipods differ as mentioned in the generic remarks.

The lack of submedian spines on the ventral surface of the sixth abdominal somite, the presence of fewer than four papillae on each antenna, fewer than five epipods, fewer than thirteen teeth on the dactylus of the claw, a strong rather than faint proximal notch on the dactylus of the claw, posterolateral spines on the sixth abdominal somite, a narrower

posterior projection on the dorsum of the telson, and spatulate rather than sharp spines on the uropodal exopod will distinguish the western Atlantic *P. enodis* and *P. horologii* from the eastern Atlantic *P. eusebia*.

The number of spines on the proximal segment of the uropodal exopod is variable. The male paratype and one female paratype (USNM 128832) have four spines on each exopod, whereas the holotype has four spines on one exopod and five on the other.

Submedian denticles on the telson vary as follows: the holotype has eight denticles on each side of the midline; both paratypes from off Egmont Key have seven denticles on one side and eight on the other; the female from off Charlotte Harbor has seven denticles on each side.

Type-locality: About 65 miles west of Egmont Key, Pinellas County, Florida, in 55 meters.

Biology: The holotype and two paratypes (USNM 128832 and FSBCI 7268) of *P. horologii*, new species, were collected during the Hourglass cruises (Joyce and Williams, 1969). Gould and Stewart (1956) describe the lithified bottom sediments in this collection area as a continuous blanket of calcareous algae, primarily *Lithothamnion* and other genera. They describe the unconsolidated sediments in this area as a thin veneer of algal sand overlying limestone bedrock, with essentially no quartz evident. The unconsolidated sediments in the area of *Albatross* Station 2410, from which the second paratype was collected, is medium texture shell sand. Joyce and Williams (1969) briefly describe the bottom at the type-locality, Hourglass Station D. It is primarily *Lithothamnion*, crushed shell, and brown silt, with foraminifera tests abundant.

When the holotype was collected, bottom temperature was 22.0 degrees C and salinity was 36.16 parts per thousand. Bottom temperature at this locality ranged from 25.0 to 18.0 degrees C and averaged 20.2 degrees C over a 24-month period. Salinity ranged from 36.00 to 32.54 parts per thousand and averaged 36.26 parts per thousand.

When the female paratype from off Egmont Key was collected, bottom temperature was 19.0 degrees C and salinity was 36.28 parts per thousand. When the male paratype from that area was collected, bottom temperature was 19.0 degrees C and salinity was 36.36 parts per thousand. Bottom temperature at that location ranged from 26.0 to 17.5 degrees C and averaged 20.3 degrees C. Salinity ranged from 36.55 to 32.65 parts per thousand and averaged 35.99 parts per thousand.

Analysis of the fauna associated with *P. horologii* is incomplete. Other stomatopods associated with this species include *Meiosquilla quadridens* (Bigelow, 1893), *Squilla deceptrix* Manning, 1969, *Eurysquilla plumata* (Bigelow, 1901), *Parasquilla coccinea* Manning, 1962, and *Gonodactylus bredini* Manning, 1969. These stomatopods have predominantly tropical Caribbean distributions (Manning, 1969). *Eurysquilla plumata* has not previously been reported in the Gulf of Mexico north of Tortugas. Mr. William G. Lyons (personal communication), who is investigating the mollusks from Project Hourglass, estimates that a majority of the mollusks associated with *P. horologii* are Caribbean species. Dawes and Van

Breedveld (1969) cite the predominance of tropical genera and species of benthic marine algae as a general feature of the offshore Hourglass stations. Dawson (1966) lists 23 of the 32 genera of benthic chlorophyta, phaeophyta, and rhodophyta associated with *P. horologii* as tropical Atlantic genera. Whether *P. horologii* has tropical Caribbean affinities is yet unknown.

Development: Unknown.

Sexual dimorphism: None was observed.

Type: The holotype and two female paratypes are in the Division of Crustacea, National Museum of Natural History, Smithsonian Institution. The male paratype is in the Invertebrate Reference Collection of the Marine Research Laboratory, Florida Department of Natural Resources.

Etymology: The name refers to the biological sampling program (Hourglass = *Horologium*) which yielded the holotype and two paratypes.

Distribution: Known only from the eastern Gulf of Mexico, off Egmont Key, Florida, in 55 and 73 meters, and off Charlotte Harbor in 51 meters, on crushed shell and algal sand.

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